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[PDF] Secure link state routing for mobile ad hoc networks

P Papadimitratos, ZJ Haas - Proc. IEEE Workshop on Security and 2003 - Citeseer ... Clearly, SLSP nodes should be able to perform **public key** operations. ... First, nodes reduce or increase their LSU broadcast period according to the network conditions. ... 4. Conclusions and future work We proposed a secure link state protocol (SLSP) for mobile ad hoc networks. ... Cited by 174 - Related articles - View as HTML - All 16 versions

IPDFI Secure routing for **mobile** ad hoc networks

P Papadimitratos, ZJ Haas - SCS Communication Networks and ..., 2002 - Citeseer ... Abstract The emergence of the Mobile Ad Hoc Networking (MANET) technology advocates self-organized ... could be instantiated, for example, by the knowledge of the public key of the ... Finally, the broadcast nature of the radio channel mandates that each transmission is received ... Cited by 1046 - Related articles - View as HTML - All 52 versions

ANODR: anonymous on demand routing with untraceable routes for mobile ad-hoc networks

J Kong, X Hong - ... of the 4th ACM international symposium on Mobile ..., 2003 - portal acm org ... The first one is a naive porting of MIX-Net to **mobile** ad hoc networks. ... Compared to ANODR-PO, ANODR-BO ensures that no public key operation is executed during RREQ ... 3 shows the case where anonymous route discovery depends completely on local broadcast with trap ...

Cited by 315 - Related articles - All 27 versions

Secure broadcasting using the secure lock

GH Chiou, WT Chen - IEEE Transactions on Software ..., 1989 - leeexplore.ieee.org ... In this paper, we propose the concept of a secure broad- casting, effected by means of a secure lock, on broadcast channels, such as satellite, radio, etc. ... By using the secure lock, we also present protocols for secure broadcasting, based on the public- key cryptosystem as ... Cited by 209 - Related articles - All 11 versions

Pre-loaded key based multicast and **broadcast** authentication in **mobile** ad-hoc networks

M Ramkumar, N Menon - IEEE Global Telecommunications ..., 2003 - ieeexplore.ieee.org ... communication between nodes is very crucial [6]. In general, the types of communication between various nodes may be classified as unicast, multicast and broadcast. ... 2) No asymmetric crypto primitives due to resource con- straints in mobile nodes. ... public key cryptography. ...

Cited by 33 - Related articles - All 6 versions

[PDF] The TESLA broadcast authentication protocol

A Perrig, R Canetti, JD Tygar, D Song - RSA CryptoBytes, 2002 - Citeseer ... Examples of broadcast distribution networks are satellite broadcasts, wireless radio broadcast, or IP multicast. ... TESLA is used in a wide variety of applications, ranging from broadcast authentication in sensor ... signature key pair, with the private key K -1 S and the **public key** K S ... Cited by 428 - Related articles - View as HTML - All 31 versions

Mobile wireless computing: challenges in data management

T Imielinski, BR Badrinath - Communications of the ACM, 1994 - portal acm.org

... What is the role of a wireless medium in distribution of information? How can one query data that is broadcast over the wireless? ... These are special mobile radio net-works provided by private service providers such as RAM and ARDIS. ...

Cited by 584 - Related articles - BL Direct - All 6 versions

[PDF] Secret key agreement by public discussion from common information

UM Maurer... - IEEE Transactions on Information Theory, 1993 - Citeseer

... For instance the security of the well-known RSA public-key cryptosystem 11] is based on the (unproven) di ... acquire random variables X and Y is to receive the signal of a satellite **broadcasting** random bits ... avoid at least a small bit error probability), or of a deep space radio source ...

Cited by 565 - Related articles - View as HTML - Bt. Direct - All 23 versions

Mobile ip

CE Perkins - International Journal of Communication 1998 - interscience wiley.com

... Radio links (especially telephone) and infrared links seem to be among the most popular, but satellite systems ... busy to serve new mobile nodes sets the 'B' bit, but continues to broadcast advertisements periodically so that current registered mobile nodes (customers ...

Cited by 871 - Related articles - BL Direct - Ali 60 versions

Proactive **public kev** and signature systems

A Herzberg, M Jakobsson, S Jarecki, H ... - Proceedings of the ..., 1997 - portal.acm.org ... work cleals with the general theory of proactive memory maintenance and computation in the presence of mobile faults in ... (Note that, here we assume broadcast the model of [HJKY], where proactive secret sharing was illtrodricecl and we adopt it to proactive public key systems. ...

Cited by 220 - Related articles - All 11 versions

[CITATION] Minimization of Boolean functions

EJ McCluskey - Bell System Technical Journal, 1956 - citeulike.org

... stream-cipher, 5. vickrey, 5. hierarchy, 5. broadcast, 4. random-oracle, 4. traversal, 4. inverted-hash-tree, 4. ... combinatorics, 2. stream, 2. time-stamping, 2. mobile, 2. one-way-trapdoor, 2. file-import-08-07-28, 2. ... set-theory, 1. factorization, 1. time-memory-data, 1. public-key, 1. rekey, ... Cited by 666 - Related articles - Cached

[PDF] Providing robust and ubiquitous security support for mobile ad-hoc networks

H Luo, J Kong, P Zerfor, S Lu, L Zhang - IEEE ICNP, 2001 - Citeseer

... n may be dynamically changing as mobile nodes join, leave, or fail over time. ... (1) The public key PK for ... than in their wired counterpart [34], monitoring and detecting misbehav- iors among one-hop neighbors are readily easier and more practical due to the broadcast nature of ...

Cited by 579 - Related articles - View as HTML - All 29 versions

Route optimization for mobile IP

CE Perkins, DB Johnson - Cluster Computing, 1998 - Springer

... Finally, this notification allows any resources con-sumed by the mobile node at the previous foreign agent (such as an allocated radio channel) to be released immediately, rather than waiting for its registration lifetime to expire. ...

Cited by 588 - Related articles - Bt. Direct - All 6 versions

Random key predistribution schemes for sensor networks

H Chan, A Perriq, D Song - 2003 - computer.org

... The ISM band radio receiver communicates at a peak rate of 40Kbps at a range of up to ... and power resources of sensor nodes of- ten makes it undesirable to use public-key algorithms, such ... This can be accomplished with a simple local **broadcast** of all key identifiers that a node ...

Cited by 1679 - Related articles - Bt. Direct - All 49 versions

A quick group key distribution scheme with "entity revocation"

J Anzai, N Matsuzaki, T Matsumoto - Advances in Cryptology- ..., 1999 - Springer ... concept and a concrete scheme of a conference key distribution for secure digital **mobile** communications with ... in section 3. Moreover, we consider that a time-stamp on the **broadcast** data is ... To prevent an attacker from modifying and forging a **public key** on a public bulletin board ... Cited by 79 - Related articles - Bi. Direct - All 3 versions

[PDF] An authentication and security protocol for mobile computing

Y Zheng - IFIP World Conference on Mobile Communications, 1996 - Citeseer

... This section proposes an authentication and key distribution protocol based on a **broadcast** channel in a ... involves a trusted certication authority ca which provides participants of the network, including **mobile** users and base stations, with **public key** certication services. ...

Cited by 37 - Related articles - View as HTML - All 3 versions

Environmental key generation towards clueless agents

J Riordan, B Schneier - Mobile Agents and Security, 1998 - Springer

... Unfortunately these techniques are not applicable to **mobile** agents due to the fact that software, unlike hardware, is completely and trivially observable. ... 2. The server returns the **public key**, D for that time. ... (Again, the server could continuously **broadcast** Ei). ...

Cited by 178 - Related articles - Bt. Direct - All 14 versions

Cryptology for digital TV broadcasting

BM Macq, JJ Quisquater - Proceedings of the IEEE, 1995 - leeexplore.leee.org

... in (I), is seen as a **public key** (everyone is able to encrypt) but the key K2, which is ... embeds in his **broadcast** (or, more precisely, in a digital component of his **broadcast**) an entitlement ... to which he is not entitled either by eavesdropping the transmitted signals (**radio** channel, cable ...

Cited by 316 - Related articles - BL Direct - All 4 versions

[PDF] HiperLAN/2—The broadband radio transmission technology operating in the 5 GHz freque band

M Johnsson - HiperLAN/2 Global Forum, 1999 - Citeseer

... are bidirectional whereas point-to-multipoint are unidirectional in the direction towards the **Mobile** Terminal ... **Broadcast** and multicast traffic can also be protected by encryption through the use of common keys (all ... one is to use a pre-shared key and the other is to use a **public key**. ... Cited by 89 - Related articles - View as HTML - All 24 versions

[PDF] Security in public mobile communication networks

H Federrath, A Jerichow, D Kesdogan, A ... - WISSENSCHAFTLICHE ..., 1995 - Citeseer ... completely anonymous to the network by delivering the message (possibly end-to-end-encrypted) to all stations (**broadcast**). ... Change of encoding of a message can be implemented using a **public-key** cryptosystem. ... 2.2.1 **Mobile Radio** Systems with Reduced Locating-Ability ... Cited by 31 - Related articles - View as HTML - BL Direct - All 16 versions

MIXes in mobile communication systems: Location management with privacy

H Federrath, A Jerichow, A Pfitzmann - Information Hiding, 1996 - Springer

... The attacker could simply encrypt the outgoing messages of a MIX Mi using its **public key** CMi and ... of the next register (AR1) which, in turn, stores the location information of the **mobile** subscriber. ... P2 to store the LAI and the implicit address TMSI for the **broadcast** message on ...

Cited by 62 - Related articles - BL Direct - Ali 24 versions

[PDF] Key management for large dynamic groups: One-way function trees and amortized initialization

D Balenson, D McGrew, A Sherman - 1999 - panix.com

... be able to take advantage of efficient **broadcast** channels, such as **radio broadcast** and Internet ... published methods, our algorithm achieves a new low in the required **broadcast** size. ... distributed functionality, they suffer from a linear number of expensive **public-key** operations. ...

Cited by 230 - Related articles - View as HTML - All 13 versions

Toward secure key distribution in truly ad-hoc networks

A Khalili, J Katz, WA Arbaugh - 2003 - computer.org

... exist between devices in the network, or to assume that every principal has a **public-key** certificate which ... We also assume that nodes are **mobile** and that due to this and other environmental conditions ... eg, that all nodes at the time of network formation share a **broadcast** channel ... Cited by 244 - Related articles - All 12 versions

[PDF] Key establishment in large dynamic groups using one-way function trees DA McGrew, AT Sherman - Manuscript submitted to IEEE Transactions on ..., 1998 - Citeseer ... be able to take advantage of e cient **broadcast** channels, such as **radio broadcast** and Internet ... 12, 13], require a linear number of **public-key** operations, which are slow in software ... The LKH method 14, 15] achieves logarithmic **broadcast** size, storage, and computational cost. ... Cited by 293 - Related articles - View as HTML - All 12 versions

Conference key distribution schemes for secure digital **mobile** communications MS Hwang, WP Yang - IEEE Journal on Selected areas in ..., 1995 - ieeexplore ieee.org ... 111. Two NEW EFFICIENT SCHEMES In this section we present two conference key distribution protocols for digital **mobile** communications. The first is based on **public-key** cryptography. In this scheme, the network center need not keep the secret keys of all conferees. ... Cited by 40 - Related articles - 8L. Direct - All 3 versions

[PDF] Preserving privacy in a network of mobile computers

DA Cooper, KP Birman - IEEE Symposium on Security and Privacy, 1995 - Citeseer ... An example of a **public key** scheme is RSA 18]. As with most public ... Since messages are **broadcast** to every computer, recipient anonymity is also guaranteed. ... This technique is also not well suited for **mobile** computers which may frequently dis- connect from the network. ... Cited by 90 - Related articles - View as HTML - BL Direct - All 22 versions

A key-management scheme for distributed sensor networks

L. Eschenauer, VD Gligor - Proceedings of the 9th ACM Conference ..., 2002 - portal.acm.org ... of the network, and control nodes, which monitor the status of and **broadcast** simple commands ... have limited, if any, mobility after deployment, some nodes are highly **mobile** (eg, data ... nodes in this range make it impractical to use typical asymmetric (**public-key**) cryptosystems to ... Cited by 2014 - Related articles - Ali 53 versions

Key-insulated **public key** cryptosystems

Y Dodis, J Katz, Š Xu, M Yung - Advances in Cryptology—EUROCRYPT ..., 2002 - Springer ... Cryptographic computations (decryption, signature genera- tion, etc.) are often performed on a relatively insecure device (eg, a **mobile** device or an Internet-connected ... All cryptographic computations are still done on the insecure device, and the **public key** remains unchanged. ... Cited by 197 - Related articles - BL Direct - All 16 versions

[PDF] Public key protocols for wireless communications

C Boyd, DG Park - Proceedings of the 1st International Conference on ..., 1998 - Citeseer ... As for A's way to get the **public key** of the network, it may receive the key value from the system **broadcast** channel of ... B can get the **public key** of the user from the certificate data of A if it is included inside the ... Note that the first message can be pre-calculated off-line by the **mobile**. ... Cited by 45 - Related articles - View as HTML - All 10 versions

[PDF] Location management strategies increasing privacy in mobile communication D Kesdogan, H Federrath, A Jerichow, A ... - 12th International ..., 1996 - Citeseer ... For the reachability of a mobile subscriber signaling takes place in more than one LA. ... Another difference to GSM is the necessary bandwidth on the broadcast channel for signaling. By using

public key cryptography, one paging message is approximately 500 bit long. ...

Cited by 31 - Related articles - View as HTML - All 22 versions

[PDF] Efficient distribution of key chain commitments for broadcast authentication in distributed sensor networks

D Liu, P Ning... - Proceedings of the 10th Annual Network and ..., 2003 - Citeseer ... networks. Gen- erally, an asymmetric mechanism, such as **public key** cryptography, is required to authenticate **broadcast** messages. Otherwise, a malicious receiver can easily forge any packet from the sender. However, due to the ...

Cited by 183 - Related articles - View as HTML - All 20 versions

[PDF] Design issues in mobile-agent programming systems

NM Karnik, AR Tripathi - IEEE concurrency, 1998 - Citeseer

... be integrated with the name resolution service, so that a name lookup can return a **public key** in addition ... Table 2 summarizes the basic mobility support provided by the seven **mobile** agent systems surveyed ... Another model is to provide **broadcast** of events to all agents in a group ...

Cited by 288 - Related articles - View as HTML - BL Direct - All 13 versions

Proxy-based security protocols in networked mobile devices

M Burnside, D Clarke, T Mills, A Maywah, S ... - Proceedings of the ..., 2002 - portal.acm.org ... Devices themselves may be **mobile** and may change loca- tions. ... At the same time that this information is **broadcast** in the I~F spectrum, the beacon also ... 4. PROXY TO PROXY PROTOCOL SPKI/SDSI (Simple **Public Key** Infrastructure/Simple Dis- tributed Security Infrastructure) [7 ... Cited by 75 - Related articles - All 29 versions

SEAD: Secure efficient distance vector routing for mobile wireless ad hoc networks

YC Hu, DB Johnson, A Perrig - Ad Hoc Networks, 2003 - Elsevier

... that can create routing loops are more common in wireless and **mobile** networks such ... trust relationships from PGP-like certificates without relying on a trusted **public key** infrastructure [19]. ... Any efficient **broadcast** authentication mechanism, such as TESLA [37], HORS [42], or TIK ...

Cited by 852 - Related articles - All 52 versions

Mitigating routing misbehavior in **mobile** ad hoc networks

S Marti, TJ Giuli, K Lai, M Baker - ... international conference on **Mobile** ..., 2000 - portal.acm.org ... One advantage of wireless is the ability to transmit data among users in a common area while remaining **mobile**. ... not have this information (for instance if it were implemented on top of a hop-by-hop routing protocol), then a malicious or broken node could **broadcast** the packet to ... Cited by 1885 - Related articles - All 75 versions

[PDF] MOCA: Mobile certificate authority for wireless ad hoc networks

S Yi, R Kravets - 2nd Annual PKI Research Workshop Pre-Proceedings, 2003 - Citeseer ... PKI (**Public Key** Infrastructure), an infrastructure for managing digital certificates, was introduced exactly for ... operator chooses MOCAs based on an observation of heterogeneity among **mobile** nodes, typically ... a certification service cheaply by using a one-hop **broadcast** for the ... Cited by 226 - Related articles - View as HTML - All 30 versions

Authenticated ad hoc routing at the link layer for mobile systems

J Binkley, W Trost - Wireless Networks, 2001 - Springer

... In the ad hoc protocol, all communicants **broadcast** beacons, not just **Mobile**-IP agents. ... registration packet could include the authenticated addressing information and the **mobile** node would ... The symmetric keys might be replaced with **public key** cryptography [6]. Portland State ...

Cited by 53 - Related articles - Bt. Direct - All 22 versions

The first ten years of **public-key** cryptography

W Diffie - Proceedings of the IEEE, 1988 - leeexplore leee.org

Page 1. The First Ten Years of **Public-Key** Cryptography ... Hoffman wanted term papers and required each student to submit a proposal early in the term. Merkle addressed the problemof **public-key** distributionoras hecalled it "Secure Communication over Insecure Channels" [70]. ...

Cited by 193 - Related articles - All 13 versions

[PDF] A novel authentication scheme for ad hoc networks

L Venkatraman, DP Agrawal - IEEE Wireless Communications and ..., 2000 - Citeseer ... purview. The CA ought to be a completely trusted entity and issues a digi- tal certificate to any **mobile** host that needs to be authen- ticated. ... members. This key is encrypted with the system **public key** and **broadcast** by the head. Each ...

Cited by 73 - Related articles - View as HTML - All 9 versions

Business models and transactions in mobile electronic commerce: requirements and properties

A Tsalgatidou, E Pitoura - Computer Networks, 2001 - Elsevier

... If used, eg, to **broadcast** multimedia contents over the network, the network would collapse, because ... is charged per connection-time, while for others (eg, in packet **radio**), it is ... of tariffs, eg, session-based, transaction-based, connection time-based, while in **mobile** e-commerce ...

Cited by 133 - Related articles - All 15 versions

Multicast security and its extension to a mobile environment

L Gong, N Shacham - Wireless Networks, 1995 - portal.acm.org

... We also describe an initial architectural design for secure multicast in a **mobile** environment. We conclude Wireless Networks 1 (1995) 281^295 281 ... the order of O(2n). The problem we examine here is how to securely **broadcast** a message when **public-key** sys- tems ...

Cited by 47 - Related articles - All 7 versions

SPINS: Security protocols for sensor networks

A Perrig, R Szewczyk, JD Tygar, V Wen, DE ... - Wireless networks, 2002 - portal.acm.org ... Keywords: secure communication protocols, sensor networks, **mobile** ad hoc networks, MANET ... and developing μTESLA (the "micro" version of TESLA), providing authenticated streaming **broadcast**. ... bytes RAM 512 bytes EEPROM Communication 916 MHz **radio** Bandwidth 10 ... Cited by 2260 - Related articles - BL Direct - All 163 versions

Dynamic participation in a secure conference scheme for **mobile** communications

MS Hwang - IEEE transactions on vehicular technology, 1999 - ieeexplore ieee.org ... 4], and it is suitable to distribute CK over a public **broadcast** channel. ... T. Okamoto, and S. Tsujii, "On key distri- bution and authentication in **mobile radio** networks," in ... A. Shamir, and L. Adleman, "A method for obtaining digital signatures and **public key** cryptosystems," Commun. ... Cited by 48 - Related articles - Bt. Direct - All 5 versions

Making the key agreement protocol in mobile ad hoc network more efficient

G Yao, K Ren, F Bao, R Deng, D Feng - Applied Cryptography and ..., 2003 - Springer ... To securely **broadcast** a message, all the members in the network need share a ... encryption algorithms (such as DES, AES) is much faster than the **public key** based protocols ... Among the **mobile** nodes, backbone nodes have an additional powerful **radio** to establish wireless links ... Cited by 19 - Related articles - Bt. Direct - All 6 versions

Proactive secret sharing or: How to cope with perpetual leakage

A Herzberg, S Jarecki, H Krawczyk, M Yung - Advances in Cryptology— ..., 1995 - Springer ... phase the servers hold new shares of the secret t . THE **MOBILE** ADVERSARY MODEL. ... We mume also that the adversary is connected to the **broadcast** channel C, which ... underlying cryptographic primitives on which we base our design (this includes **public-key** encryption and ... Cited by 461 - Related articles - BL Direct - All 8 versions

Networks without user observability* 1

A Pfitzmann, M Waidner - Computers & Security, 1987 - Elsevier

... a "transmission on demand basis" even for the classical **broadcast** services TV and **radio**, major parts ... be made completely anonymous to the network by delivering the message to all stations (**broadcast**). ... Invisible implicit addresses can be realized with a **public key** cryptosystem ...

Cited by 224 - Related articles - All 8 versions

Techniques for Privacy and Authentication in &son a I Com mun ication Systems

D Brown - IEEE Personal Communications, 1995 - leeexplore.leee.org

... GSM systems have dealt with this problem by the practice of using "temporary **mobile** station identities" (tmsi). ... The hybrid method offers some protocol advantages as well. Since the Access Controller's **public key** is **broadcast**, a registration can be anonymous. ...

Cited by 70 - Related articles - All 6 versions

Securing ad hoc networks

L Zhou, ZJ Haas - IEEE network, 1999 - ieeexplore.ieee.org

... failures, such as **radio** propagation impairment, or hocause of malicious attacks on the network. ... Unlike other wireless **mobile** networks, soch as mobile IP 1, nodes in an ad hoc network may ... The CA has a publiclpri- vate key pair, wilh its **public key** known to every node, and signs ...

Cited by 1893 - Related articles - Bt. Direct - All 87 versions

Introduction of the asymmetric cryptography in GSM, GPRS, UMTS, and its **public key** infrastructure integration

CF Grecas, SI Maniatis, IS Venieris - **Mobile** Networks and Applications, 2003 - Springer ... entire network facilitates as well the distribution of the pub- lic key in the case of **mobile** network interconnections ... sends the Identity Message to the MSC/VLR with its identity data, using the VLR's **public key**, see figure 3, possibly emitted on the **Broadcast** Channel (BCH ...

Cited by 29 - Related articles - BL Direct - All 4 versions

A new set of passive routing attacks in **mobile** ad hoc networks

J Kong, X Hong, M Gerla - IEEE Military Communications ..., 2003 - leeexplore.ieee.org ... imprac- tical conjecture if we assume data packets transmitted in wireless **broadcast** channel are ... Legitimate network members can employ **public key** cryptosystems (eg, RSA, El Gamal) and symmetric key ... collaborative adver- saries to trace the motion pattern of a **mobile** node. ... Cited by 26 - Related articles - Bt. Direct - All 12 versions

Cryptographic solution to a problem of access control in a hierarchy

SG Akl, PD Taylor - ACM Transactions on Computer Systems (..., 1983 - portal acm.org ... controls; information flow controls; E.3 [Data]: Data En- cryption--Data Encryption Standard (DES); public-key cryptosystems ... to files that are stored in a central computer memory, but also to messages broadcast on a communication network using telephone lines or radio waves ... Cited by 337 - Related articles - All 2 versions

[PDF] Challenges in mobile electronic commerce

A Tsalgatidou, J Veijalainen, E Pitoura - Proceeding of IeC, 2000 - Citeseer

... **Broadcasting** offers an efficient means to disseminate information to a large consumer population. ... For example, if a customer buys a product through its **mobile** phone, this ... Techniques like the asymmetric cryptographic algorithm (also called **Public Key** algorithm) are used to ...

Cited by 46 - Related articles - View as HTML - All 9 versions

[PDF] Sprite: A simple, cheat-proof, credit-based system for mobile ad-hoc networks S Zhong, J Chen, YR Yang - IEEE INFOCOM, 2003 - Citeseer

... where PK0 is the **public key** of the sender. ... As route-discovery **broadcast** can be viewed as a special case of multicast, this approach can also be applied to multicast if ... In the evaluations below, our **mobile** node is a Laptop with an Intel **Mobile** Pentium III processor at 866MHz. ...

Cited by 671 - Related articles - View as HTML - Bt. Direct - All 34 versions

MANETconf: Configuration of hosts in a mobile ad hoc network

S Nesargi, R Prakash - ... -First Annual Joint Conference of the ..., 2002 - ieeexplore.ieee.org ... I. I NTRODUCTION A mobile ad hoc network (MANET) is a group of mobile, wireless nodes which cooperatively and spontaneously form an IP-based network. ... If there is any response that, too, is multi-cast/broadcast on the same link. ...

Cited by 328 - Related articles - BL Direct - All 25 versions

Key agreement in ad hoc networks* 1

N Asokan, P Ginzboorg - Computer Communications, 2000 - Elsevier

... These public key certificates can allow participants to verify the binding between the IP addresses and keys ... The strongest attacker can disrupt any protocol by jamming the radio channel or modifying ... The leader will broadcast the message in step 1. The rest of the messages will ... Cited by 408 - Related articles - All 11 versions

[PDF] Trust management and proof-carrying code in secure mobile-code applications

J Feigenbaum, P Lee - ... Workshop on Foundations for Secure Mobile ..., 1997 - Citeseer ... A may require metadata signed by C that provides a valid public key for B, a ... This would be accomplished by enclosing fragments of mobile code into each network packet, to ... networks seem to provide a means for better support multicast and broadcast applications, essentially ...

Cited by 35 - Related articles - View as HTML - All 21 versions

Weak duplicate address detection in **mobile** ad hoc networks

NH Vaidya - ... international symposium on Mobile ad hoc networking ..., 2002 - portal acm.org ... to the Address Resolution Protocol (ARP), such that ARP replies are sent by a **broadcast**, as opposed ... This paper considers the problem of duplicate address de-tection (DAD) in mobile ad hoc networks. ... and it may not be possible to embed the key 3 If public-key cryptography is ... Cited by 248 - Related articles - All 27 versions

Strategies for enhancing routing security in protocols for **mobile** ad hoc networks* 1

L Venkatraman, DP Agrawal - Journal of Parallel and Distributed ..., 2003 - Elsevier ... Moreover, this authority can be well protected since it is not mobile like the other nodes. ... has elapsed, and if the node mobility are relatively high, each node might need to store the public key of large ... Denial of service: This can be done by generating false broadcast packets like ... Cited by 48 - Related articles - BL Direct - All 6 versions

An optimized protocol for **mobile** network authentication and security

X Yi, E Okamoto, KY Lam - ... Mobile Computing and Communications ..., 1998 - portal acm.org ... tention as it represents one of the earliest solution employ- ing a combination of both private-key and public-key encryp- tion. ... In the same article, Zheng proposed an authentication and key distribution protocol that utilized a broadcast channel for a mobile user authenticating ... Cited by 15 - Related articles - All 3 versions

LHAP: a lightweight hop-by-hop authentication protocol for ad-hoc networks

S Zhu, S Xu, S Setia, S Jajodia - 2003 - computer.org

... steps in which a control packet, eg, a route request packet, is broadcast to all ... Further, the resources of a mobile node such as battery power, computational capacity and bandwidth ... Third, we assume each node has a public key certificate signed by a trusted certificate authority ...

Cited by 63 - Related articles - All 18 versions

[PDF] Security issues in a future vehicular network

M El Zarki, S Mehrotra, G Tsudik, N ... - European Wireless, 2002 - Citeseer

... Also, vehicles communicating in an ad hoc network **broadcast** their data, thus, pair-wise (or group-wise) key distribution is ... issues: a related concern in many mobile networks is the low CPU speed of the mobile node. ... Certification Infrastructure (PKI): public key digital signatures ...

Cited by 96 - Related articles - View as HTML - All 9 versions

A new anonymous conference key distribution system based on the elliptic curve discrete logar problem* 1

CC Yang, TY Chang, MS Hwang - Computer Standards & Interfaces, 2003 - Elsevier ... 3. M.-S. Hwang and WP Yang, Conference key distribution protocols for digital **mobile** communication systems. ... 194–202. 8. CH Lin, CC Chang and RCT Lee, A conference key **broadcasting** system using sealed lock. ... 9. A. Menezes, Elliptic Curve **Public Key** Cryptosystem. ... Cited by 24 - Related articles - Ali 7 versions

[PDF] Mobile ad hoc networking: imperatives and challenges

I Chlamtac, M Conti, JJN Liu - Ad Hoc Networks, 2003 - Citeseer ... networking applications can be traced back to the DARPA Packet **Radio** Network (PRNet ... and store- and-forward routing, and its possible application in **mobile** wireless environment. PRNet features a distributed architecture consisting of network of **broadcast** radios with minimal ... Cited by 556 - Related articles - View as HTML - All 34 versions

[PDF] Ubibay: An auction system for mobile multihop ad-hoc networks

H Frey, JK Lehnert, P Sturm - Workshop on Ad hoc Communications and ..., 2002 - Citeseer ... to redundant rebroadcasts, contention and packet collisions, also known as the **broadcast** storm problem ... might be reduced by using the knowledge about temporary adjacent **mobile** devices as ... In [9] al- gorithms for a self-organized **public-key** infrastructure are presented, where ... Cited by 16 - Related articles - View as HTML - All 18 versions

[PDF] A streaming architecture for next generation internet

A Dutta, H Schulzrinne - Proc. of ICC'01, 2001 - Citeseer

... of bringing quality audio/video **broadcast** to the people in remote site, and to the wireless clients who are **mobile**. ... stream should effectively prevent IMCs, as well as the non-paid RASs, from receiving the **broadcast** content. ... **Public key** technology is em- ployed for this purpose. ...

Cited by 13 - Related articles - View as HTML - All 9 versions

IPDF1 Securing **mobile** ad hoc networks

P Papadimitratos, ZJ Haas - The handbook of ad hoc wireless networks, 2003 - Citeseer ... A second proposal to secure AODV makes use of **public key** cryptography as well and ... The Secure Routing Protocol The Secure Routing Protocol (SRP) [17] for **mobile** ad hoc ... Communication takes place over a **broadcast** medium, and it is assumed that malicious nodes, which ... Cited by 39 - Related articles - View as HTML - All 9 versions

[PDF] Energy-efficient and low-latency key management for sensor networks

DW Carman, BJ Matt, GH Cirincione - ... Security Research Journal, 2003 - isso.sparta.com ... recent investigation in establishing keys to secure link-layer broadcasts for a prototype Army sensor network radio reveals that ... other members Uni-cast to a single member 1 6 5 4 3 2 Group leader broadcast its certificate (and its ephemeral public key) Group members ...

Cited by 38 - Related articles - View as HTML - All 3 versions

Generalization of M Public Key System and Analysis of Its Performance on Noisy Channel [J] W Xin-mei - Acta Electronica Sinica, 1986 - en.cnki.com.cn

... A JOINT SIGNATURE ENCRYPTION AND ERROR CORRECTION **PUBLIC-KEY** CRYPTOSYSTEM BASED ... University, Dalian, Liaoning 116026, China 2. National **Mobile** Communications Research ... Tzeng(Xidian University, Xian) (Lehigh Univ.); **Broadcast** ... Cited by 9 - Related articles - Cached

[PDF] Preventing selfishness in open mobile ad hoc networks

H Miranda, L Rodrigues - Proc. Seventh CaberNet Radicals Workshop, 2002 - Citeseer ... However, there is a significant difference between the fixed and the **mobile** environment. ... The modules use a **Public Key** Infrastructure (PKI) to ensure the authentication of the tamper ... by being suspicious on the incoming selfish- ness alerts that other nodes **broadcast** and relying ...

Cited by 35 - Related articles - View as HTML - All 9 versions

Secure multicast in wireless networks of **mobile** hosts: protocols and issues

D Bruschi, E Rosti - Mobile Networks and Applications, 2002 - Springer

... Msi

M is the set of mobile hosts in the cell con-trolled by support station si. ... metric key pair associated with entity j in the PKI, where pj is the **public key** and p -1 j is the private ... or a group of senders/receivers, eg, a subset of S or of M, in case of multicast or broadcast messages ...

Cited by 59 - Related articles - BL Direct - All 8 versions

[PDF] An infrastructure for distributed and dynamic network management based on mobile age. technology

D Gavalas, M Ghanbari, M O'Mahony, D ... - IEEE International ..., 1999 - Citeseer

... Broadcast the bytecode to all the active agents Yes No ... "Infrastructure for Advanced Network Management based on Mobile Code", Proceedings of ... [9] Rivest RL, Shamir A., Adleman L., "A Method for obtaining Digital Signatures and Public-Key Cryptosystems", Communication ...

Cited by 55 - Related articles - View as HTML - BL Direct - All 5 versions

Efficient Dynamic-Resharing "Verifiable Secret Sharing" Against Mobile Adversary

N Alon, Z Galil, M Yung - Algorithms-ESA'95, 1995 - Springer

... The second method is a direct (and efficient) but requires, in addition to public key system, homornorphic ... linear faults (say, n/3 faults which are the upper bound for, say, broadcast or agreement ... on corrupted trustees within a time period, but lets the adversary be mobile and be ... Cited by 23 - Related articles - Bt. Direct - All 9 versions

Coding constructions for blacklisting problems without computational assumptions

R Kumar, S Rajagopalan, A Saha - Advances in Cryptology---Crypto'99, 1999 - Springer ... cast channels these devices could function by means of preset one-time pads, while for analog broadcast channels (such as radio or cable ... could function using private-key encryption, or using public-key encryption.1 In this framework, to solve broadcast security problems ...

Cited by 116 - Related articles - BL Direct - All 15 versions

[PDF] Analysis of security and privacy in mobile IP

A Fasbender, D Kesdogan, O Kubitz - 4th International Conference on ..., 1996 - Citeseer ... is no expectation of guaranteed privacy in cellular telephone networks, which broadcast their signals ... recommends that if absolute protection from traffic analysis is required, the mobile node can ... the help of so-called mixes is a technique based on public key cryptography mainly ... Cited by 48 - Related articles - View as HTML - All 8 versions

A practical and secure fault-tolerant conference-key agreement protocol

WG Tzeng - Public Key Cryptography, 2000 - Springer

... to establish a com- mon conference key K such that all their communications thereafter are encrypted with the key K. In this paper we propose a practical and prov- ably secure fault-tolerant conference-key agreement protocol under the authenticated broadcast channel model. ...

Cited by 37 - Related articles - Bt. Direct - All 5 versions

New multiparty authentication services and key agreement protocols

G Ateniese, M Steiner, G Tsudik - IEEE Journal on Selected 2000 - ieeexplore.ieee.org ... How- ever, there are some important assumptions underlying this pro- tocol. Specifically, it requires each to broadcast to the rest of the group and to receive messages in a single round. Moreover ... corre- sponding long-term public key of

Cited by 287 - Related articles - BL Direct - All 22 versions

Key establishment in large dynamic groups using one-way function trees

AT Sherman, DA McGrew - IEEE transactions on Software ..., 2003 - computer.org

... Furthermore, the basic unit of cost for all GDH methods includes public-key operations, which

are slow in software ... type of "out-of-band" resynchronization for users who have lost contact with the **broadcast** signal, as might happen when an airplane flies out of **radio** range. ...

Cited by 190 - Related articles - Bt. Direct - All 11 versions

Anonymous channel and authentication in wireless communications

WS Juang, Ct. Lei, CY Chang - Computer communications, 1999 - Elsevier

... Due to the roaming, dynamic channel assignment and **broadcasting** features of **mobile** communications, if a ... Y. Also, let K vh be the secret key shared by H and V, HID be H's identification number, {m} e r denote the ciphertext of m encrypted using Rabin's **public key** e r ...

Cited by 50 - Related articles - All 9 versions

Protecting a mobile agent's route against collusions

D Westhoff, M Schneider, C Unger, F ... - Selected Areas in ..., 2000 - Springer ... its relevant signature and all the remaining ciphertext by using its private key di that corresponds to the **public key** ei. ... Protecting a **Mobile** Agent's Route against Collusions 221 ... For example, a malicious working context ci can **broadcast** to all its accomplices that it was visited by a ... Cited by 30 - Related articles - Bt. Direct - All 5 versions

Information-theoretically secure secret-key agreement by NOT authenticated public discussion

U Maurer - Proceedings of the 16th annual international ..., 1997 - portal.acm.org

... Corollary 2. A **public-key** cryptosystem can be computationally secure but not information-theoretically (Le ... one discussed below in which Alice, Bob, and Eve receive noisy versions of a random string **broadcast** by a satellite or of the signal emitted by a deep space **radio** source ...

Cited by 47 - Related articles - Bt. Direct - All 17 versions

Public-key support for group collaboration

C Ellison, S Dohrmann - ACM Transactions on Information and ..., 2003 - portal.acm.org ... that we address and that we see in our daily lives is on **mobile** machines, often ... whether the member is connected and, if so, its network address and its **public key**) would be ... 802.11 ad hoc mode, in NGC implementations so far), presence information is gathered by **broadcast**. ... Cited by 32 - Related articles - All 2 versions

Secure **mobile** agents on ad hoc wireless networks

E Sultanik, D Artz, G Anderson, M Kam, W Regli ... - The Fifteenth Innovative ..., 2003 - aaai.org ... The security framework uses a combination of symmetric and **public-key** cryptography to support encrypted ... state; make deci- sions about their itineraries (ie, if they are **mobile** agents) based on ... may not mirror the connectivity of the network— hence, a **broadcast** message from ... Cited by 30 - Related articles - Ali 9 versions

Effects of power conservation, wireless coverage and cooperation on data dissemination among mobile devices

M Papadopouli, H Schulzrinne - ... international symposium on **Mobile** ..., 2001 - portal.acm.org ... and the destina- tion are required to have PGP in order to encrypt (using the **public key**) and then ... its destination with a constant speed uniformly selected from (0m/s,1.5m/s). When a **mobile** host reaches ... The **broadcast** is scheduled at a random time selected from the on interval. ... Cited by 231 - Related articles - All 33 versions

An authentication framework for hierarchical ad hoc sensor networks

M Bohge, W Trappe - Proceedings of the 2nd ACM workshop on ..., 2003 - portal.acm.org ... nodes that relay information from sensor nodes to ac- cess points, and (D) low-powered **mobile** sensor nodes ... system for low-powered devices, we need a certificate structure that does not employ **public key** cryptography. TESLA [12] is a **broadcast** authentication technique that ...

Cited by 97 - Related articles - Ali 20 versions

Towards flexible credential verification in mobile ad-hoc networks

St. Keoh, E Lupu - ... international workshop on Principles of **mobile** ..., 2002 - portal.acm.org ... Note that since all the credentials in a CAS may be confirmed by assertions from the same source and since the recipient has the **public key** of the ... In order to enhance the revocation capabilities in **mobile** ad-hoc network, issuers of ASSs may choose to **broadcast** to peers ...

Cited by 21 - Related articles - All 10 versions

Mobile agent middleware for mobile computing

P Bellavista, A Corradi, C Stefanelli - Computer, 2001 - ieeexplore.ieee.org

... 8,9 For example, many MA sys- tems integrate with **public key** infrastructures, sim- plifying ... to the limit because it should intervene at any migration and at any **mobile** entity search. ... scale without requiring specific knowledge; a client typically requests the service with a **broadcast** ...

Cited by 174 - Related articles - Bt. Direct - All 5 versions

[PDF] Security and privacy in radio-frequency identification devices

SA Weis - 2003 - Citeseer

... Page 20. Fundamentally, readers are quite simple devices and could be incorporated into **mobile** ... a narrow band of **radio** frequencies specified by regulation agencies such as the Federal ... the collision. The reader will then **broadcast** a bit indicating whether tags who **broadcast** ...

Cited by 262 - Related articles - View as HTML - All 26 versions

[PDF] Cooperative routing in mobile ad-hoc networks: Current efforts against malice and selfish

S Buchegger, JY Le Boudec - Lecture Notes on Informatics, Mobile ..., 2002 - Citeseer

... wireless links are vulnerable to jamming and by their inherent **broadcast** nature facilitate ... refreshing for distributed certification authorities for key management in **mobile** ad-hoc ... Localized certification based on the **public key** infrastructure (PKI) with certification- authority and ...

Cited by 36 - Related articles - View as HTML - All 18 versions

Protocols using anonymous connections: Mobile applications

M Reed, P Syverson, D Goldschlag - Security Protocols, 1998 - Springer

... of one way communication, a means to guarantee that only the responder can receive the message, eg, **public key** encryption ... cost of **broadcast**. ... Other approaches to anonymity in **mobile** phone systems occur in [2] and [3]. Another approach to private location tracking occurs in [7 ...

Cited by 27 - Related articles - BL Direct - All 29 versions

Anonymous conference key distribution systems based on the discrete logarithm problem

YM Tseng, JK Jan - Computer Communications, 1999 - Elsevier

- ... Hellman scheme [1], the system assigns a secret key x i Z q * and computes the **public key** y i ...
- 4. MS Hwang and WP Yang, Conference key distribution schemes for secure digital **mobile** communications ... 5. T. Hwang and JL Chen, Identity-based conference key **broadcast** systems ...

Cited by 24 - Related articles - All 5 versions

[PDF] A secure routing protocol for ad hoc networks

B Dahill, BN Levine, E Royer, C Shields - ..., Tech. Rep. UM-CS-2001-037, 2001 - scss.tcd.ie

... Additionally, **mobile** nodes in the managed-open environment reside within some com- mon context or geographic proximity ... signed by T . All nodes must maintain fresh certificates with the trusted server and must know T 's **public key**. ... A \rightarrow **broadcast** : [RDp, lpK, certa, Na, t]Ka- (2 ...

Cited by 254 - Related articles - View as HTML - All 11 versions

A wireless public access infrastructure for supporting **mobile** context-aware IPv6 applications

A Friday, M Wu, S Schmid, J Finney, K ... - ... on Wireless mobile ..., 2001 - portal acm.org

... The **broadcast** protocol is one of the key mechanisms for promoting the scalability of GUIDE ... In **Mobile** IPv6 this limitation implies that a potential attacker must remain co-located with ... impersonation of the authentication server, the payload is encrypted using the **public key** of the ...

Cited by 10 - Related articles - All 10 versions

[PDF] Mobile agents and security

MS Greenberg, JC Byington, DG Harper - IEEE Communications Magazine, 1998 - ic.uff.br ... The recipi- ents of this **broadcast** include the auto-configuration server on β and the two malicious **mobile** ... Authenticating Credentials — A **mobile** agent is digitally signed by one or more parties using one of a number of algo- rithms, such as a **public key** signature algorithm ...

Cited by 175 - Related articles - View as HTML - BL Direct - All 4 versions

Friends and foes: Preventing selfishness in open mobile ad hoc networks

H Miranda, L Rodrigues - 23rd International Conference on ..., 2003 - ieeexplore.ieee.org ... Some resources, like battery power, are scarce in a **mobile** environment and can be depleted at ... To ensure the authentication of the tamper resistant modules, a **Public Key** Infrastructure (PKI) is used ... DSR, multi-hop routes can be learned either by the replies to the **broadcast** of a ... Cited by 28 - Related articles - All 8 versions

Mobile peer membership management to support multimedia streaming

SS Kang, MW Mutka - 23rd International Conference on ..., 2003 - ieeexplore.ieee.org ... When a **mobile** device is ready to connect to an outside network via its ISP, it ... a single-member CHUM network, and becomes a proxy that will periodically **broadcast** a service ... Packet Length Packet Type Packet Type Packet Length Session Key **Public Key** Random ID Session ID ... Cited by 7 - Related articles - All 14 versions

New directions in cryptography

W Diffie, M Hellman - IEEE Transactions on information ..., 1976 - ieeexplore.ieee.org ... person can originate messages but many people can receive messages, this can be viewed as a **broadcast** cipher. ... Some partial solutions are given, and it is shown how any **public key** cryptosystem can be transformed into a one ... In **radio**, by comparison, the situation is re- versed ... Cited by 7998 - Related articles - All 154 versions

[PDF] Achieving user privacy in mobile networks

B Askwith, M Merabti, Q Shi, K Whiteley - proceedings of the 13th ..., 1997 - ece.umd.edu ... can then decrypt the message (leaving the message encrypted only under y's **public key**) and send it ... using random detours within mix routes, making replies anonymous for **broadcast** messages, and ... Although [21] is not directed at **mobile** networks it does offer some interesting ... Cited by 26 - Related enticles - View as HTML - All 7 versions

Secure aggregation for wireless networks

L Hu, D Evans - 2003 Symposium on Applications and the ..., 2003 - leeexplore leee.org ... [1] present a solution to complete an authenticated key exchange protocol over the wireless link without a **public key** infrastructure, but it ... We design our protocol around these assumptions: 1. The base station is powerful and can **broadcast** messages to all nodes directly. ...

Cited by 240 - Related articles - All 21 versions

Chinese lotto as an exhaustive code-breaking machine

JJ Quisquater, YG Desmedt - COMPUTER,, 1991 - computer.org

... In **public-key** cryptosystems, where K # K', we call K the **public key** and K'the secret decryption key; pub-lishing K does not endanger the security of the cryptosystem. ... A plaintext-ciphertext pair is **broadcast** regularly by all **radio** and television sta- tions. ...

Cited by 22 - Related articles - All 5 versions

The design and implementation of a private message service for **mobile** computers DA Cooper, KP Birman - Wireless Networks, 1995 - portal acm.org

... As with most **public key** encryption schemes, RSA can also be used to sign messages. ... Since messages are **broadcast** to every computer, recipient anonymity is also guaran- ... This techni- que is also not well suited for **mobile** computers which may frequently disconnect from the ...

Cited by 17 - Related articles - All 10 versions

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